AMENDMENTS TO THE CLAIMS

Claims 1-39. (cancel)

Claim 40. (New) A method for forming a semiconductor device, said method comprising:

forming a gate structure having sidewalls over a semiconductor substrate;

performing a first blanket implant with a first dopant on said substrate to form a plurality of first diffusion regions adjacent to the sidewalls of said gate structure;

performing a re-ox to oxidize at least a portion of sidewalls of said gate structure; and

performing a second blanket implant with a second dopant on said substrate to form a plurality of second diffusion regions, each of said second diffusion regions being formed within a space previously occupied by a respective one of said plurality of first diffusion regions;

wherein

each of said first diffusion regions is associated with and located beneath a respective second diffusion region;

each of said first diffusion regions includes a portion extending beneath said gate structure; and

none of said plurality of second diffusion regions include any portion which extends beneath said gate structure.

Claim 41. (New) The method of claim 40, wherein said first dopant is a n-type dopant.

Claim 42. (New) The method of claim 41, wherein said first dopant is chosen from a group consisting of phosphorous, arsenic, and antimony.

Claim 43. (New) The method of claim 40, wherein said first dopant is a p-type dopant.

Claim 44. (New) The method of claim 43, wherein said first dopant is chosen from a group consisting of boron, boron bifloride, and borane.

Claim 45. (New) The method of claim 40, wherein said first blanket implant is performed using an energy level ranging between 5 KeV to 45 KeV.

Claim 46. (New) The method of claim 45, wherein said first blanket implant is performed using an energy level of 15 KeV.

Claim 47. (New) The method of claim 40, wherein said first blanket implant is performed using an dosage ranging between $1x10^{12}$ ions/cm^2 to $7x10^{12}$ ions/cm^2.

Claim 48. (New) The method of claim 47, wherein said first blanket implant is performed using a dosage of $2x10^{12}$ ions/cm^2.

Claim 49. (New) The method of claim 40, wherein said second dopant is the same as said first dopant.

Claim 50. (New) The method of claim 40, wherein said second dopant is different from said first.

Claim 51. (New) The method of claim 50, wherein said second dopant is of a different conductivity type as said first dopant.

Claim 52. (New) The method of claim 40, wherein said second blanket implant is performed using an energy level ranging from 5 KeV to 60 KeV.

Claim 53. (New) The method of claim 52, wherein said second blanket implant is performed using an energy level of 20 KeV.

Claim 54. (New) The method of claim 40, wherein said second blanket implant is performed using a dosage ranging from $1x10^{12}$ ions/cm^2 to $10x10^{12}$ ions/cm^2.

Claim 55. (New) The method of claim 54, wherein said second blanket implant is performed using a dosage of $4x10^{12}$ ions/cm^2.

Claim 56. (New) An integrated circuit, comprising:

a semiconductor substrate;

a gate structure having sidewalls, said gate structure being located over said semiconductor substrate;

a plurality of first diffusion regions implanted with a first dopant, said plurality of first diffusion regions each being adjacent to the sidewalls of said gate structure;

a plurality of second diffusion regions implanted with a second dopant, said plurality of second diffusions regions each being adjacent to the sidewalls of said gate structure;

wherein

each of said first diffusion regions is associated with and located beneath a respective second diffusion region;

each of said first diffusion regions includes a portion extending beneath said gate structure; and

none of said plurality of second diffusion regions include any portion which extends beneath said gate structure.

Claim 57. (New) The integrated circuit of claim 56, wherein said first dopant is a n-type dopant.

Claim 58. (New) The integrated circuit of claim 57, wherein said first dopant is chosen from a group consisting of phosphorous, arsenic, and antimony.

Claim 59. (New) The integrated circuit of claim 56, wherein said first dopant is a p-type dopant.

Claim 60. (New) The integrated circuit of claim 59, wherein said first dopant is chosen from a group consisting of boron, boron bifloride, and borane.

Claim 61. (New) The integrated circuit of claim 56, wherein the first dopant concentration ranges from $1x10^{12}$ ions/cm^2 to $7x10^{12}$ ions/cm^2.

Claim 62. (New) The integrated circuit of claim 61, wherein the first dopant concentration is $2x10^{12}$ ions/cm^2.

Claim 63. (New) The integrated circuit of claim 56, wherein said first dopant is identical to said second dopant.

Claim 64. (New) The integrated circuit of claim 63, wherein said first dopant and said second dopant are different.

Claim 65. (New) The integrated circuit of claim 63, wherein said first dopant and said second dopant are of different conductivity types.

Claim 66. (New) An semiconductor device comprising:

a substrate having a first surface;

a gate structure formed over said first surface, said gate structure having a thermally reoxidized sidewall, said thermally reoxidized sidewall having an interior surface and an exterior surface; and

a plurality of diffusion regions formed within said substrate, each of said diffusion regions being formed adjacent to the thermally reoxidized sidewall;

wherein

each of said diffusion regions respectively comprise first and second portions respectively having first and second dopant concentrations, which are different and cause each portion to have a graded dopant concentration,

each of said first portions is partially located beneath said interior surface of said thermally reoxidized sidewall; and

each of said second portions is partially located underneath said exterior surface of said thermally reoxidized sidewall; and

none of said second portion is located underneath said interior surface of said thermally reoxidized sidewall.

each of said first portions including a region extending beneath said gate structure; and

none of said second portions having any region which extends beneath said gate structure.

Claim 67. (New) The semiconductor device of claim 66, wherein said first dopant is chosen from a group consisting of: phosphorous, arsenic, and antimony.

Claim 68. (New) The semiconductor device of claim 66, wherein said second dopant is chosen from a group consisting of: phosphorous, arsenic, and antimony.

Claim 69. (New) The semiconductor device of claim 66, wherein said first dopant is chosen from a group consisting of: boron, boron bifloride, and borane.

Claim 70. (New) The semiconductor device of claim 66, wherein said second dopant is chosen from a group consisting of: boron, boron bifloride, and borane.

Claim 71. (New) A method of forming a semiconductor device, comprising:

providing a gate structure disposed over a surface of said semiconductor substrate;

performing a first blanket implant into the substrate to form a plurality of diffusion regions underneath the surface of the substrate adjacent to the gate structure, with a portion of

each diffusion regions extending underneath a portion of said gate structure, thereby forming respective first and second overlap regions;

performing a re-ox step to form oxidized sidewalls on the gate structure and oxide regions on the substrate; and

performing a second blanket implant through the oxide regions and into the substrate at locations of the first and second diffusion regions to add additional dopant to the first and second diffusion regions, wherein the oxidized sidewalls on the gate structure prevents the additional dopant from diffusing underneath the gate structure, thereby forming respective diffusion regions on opposite sides of the gate structure each having a graded dopant concentration.

Claim 72. (New) The method of claim 71, wherein said first dopant is chosen from a group consisting of: phosphorous, arsenic, and antimony.

Claim 73. (New) The method of claim 71, wherein said second dopant is chosen from a group consisting of: phosphorous, arsenic, and antimony.

Claim 74. (New) The method of claim 71, wherein said first dopant is chosen from a group consisting of: boron, boron bifloride, and borane.

Claim 75. (New) The method of claim 71, wherein said second dopant is chosen from a group consisting of: boron, boron bifloride, and borane.